

# **Software Agents in Distributed Architectures**

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**David Dickason**

**Navy Personnel Research, Studies, & Technology**



# Purpose of Web-Based Marketplace Project

- **Develop a Multi-Agent System incorporating software agents**
- **Provide a Marketplace where Sailors can be matched to jobs**
- **Ensure that distributed processes would not impose increased workload on individual Commands/Sailors**



# Major Focus in FY04

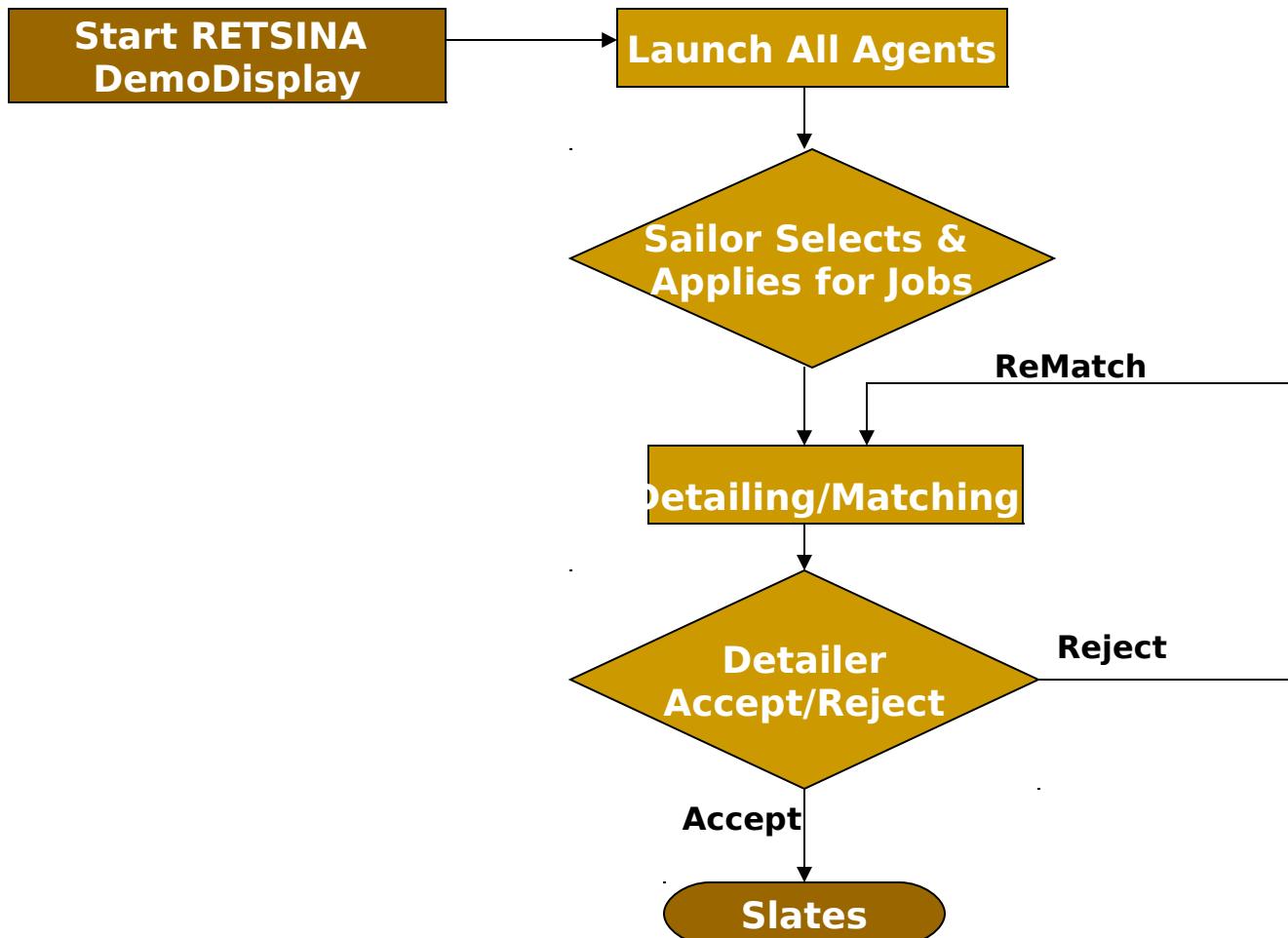
- **Investigation into parallel multi-agent computation**
- **Develop agents to assist Sailors in communicating complex preferences in the WBM**
- **Develop proactive agent to assist Commands in filling impending job vacancies with qualified Sailors**
- **Develop proactive agent to incorporate training schedules, costs, and identification of training gaps**
- **Develop Counselor Agent to recommend jobs best for individual Sailor career growth**

# Agent Demonstration

Navy Personnel Research, Studies, & Technology



# Agent Demo Process





Welcome, RDEMERS

		1.00	1.00	<a href="#">HS 3</a>	
		1.00	1.00	<a href="#">HS 11</a>	
		1.00	1.00	<a href="#">VAQ 140</a>	
		1.00	1.00	<a href="#">VS 30</a>	
		1.00	1.00	<a href="#">NAS SIG AIMD</a>	
		1.00	1.00	<a href="#">VS 30</a>	
		1.00	1.00	<a href="#">VP 46</a>	
		1.00	1.00	<a href="#">VFA 22</a>	
		0.75	1.00	<a href="#">HSL 43 LAMPS</a>	
		0.75	1.00	<a href="#">VF 154</a>	training..
		0.75	1.00	<a href="#">HS 6</a>	
		0.75	1.00	<a href="#">VAQ 136</a>	
		0.75	1.00	<a href="#">VQ 3 SEA DU COMP</a>	
		0.75	1.00	<a href="#">VF 103</a>	
		0.75	1.00	<a href="#">VS 33</a>	
		0.75	1.00	<a href="#">VFA 192</a>	
		0.75	1.00	<a href="#">HSL 49 LAMPS</a>	
		0.75	1.00	<a href="#">VRC 30 SEA D CMP</a>	
		0.75	1.00	<a href="#">HC 4 SEA COMP</a>	
		0.75	1.00	<a href="#">VRC 30 SEA D CMP</a>	
		0.75	1.00	<a href="#">VF 31</a>	
		0.75	1.00	<a href="#">VF 32</a>	
		0.75	1.00	<a href="#">VAQ 139</a>	
		0.75	1.00	<a href="#">VAW 115</a>	

## Training Details

NEC	CIN	CDP	Class Number
8878	D-602-0810	2470	2004-40

Start Date: 1/12/2004 12:00:00 AM

Graduation Date: 2/19/2004 12:00:00 AM



Welcome, SSMITH

[My Job List](#) [Job Search](#) [Profile](#) [Preferences](#)

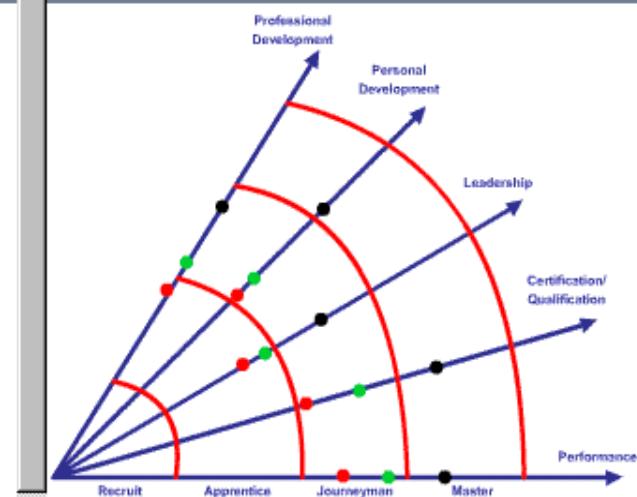
Job List

[Apply for Jobs](#)

	Priority	Job Status	Skill Score	Training Score	Title	Delete	Training	Notes
<a href="#"></a> <a href="#"></a>	1	not accepted	1.00	1.00	<a href="#">VF 211</a>			<a href="#"></a>
<a href="#"></a> <a href="#"></a>	2	open	0.92	0.92	<a href="#">LHD 1 WASP</a>			<a href="#"></a>
<a href="#"></a> <a href="#"></a>	3	open	0.88	0.88	<a href="#">VP 47</a>			<a href="#"></a>
<a href="#"></a> <a href="#"></a>	4	open	0.75	0.75	<a href="#">VFA 82</a>			<a href="#"></a>

Apply	Delete	Skill Score	Training Score	Title	Training	Notes
<a href="#"></a>		1.00	1.00	<a href="#">CVN 68 NIMITZ</a>		<a href="#"></a>
<a href="#"></a>		1.00	1.00	<a href="#">CV 64 CONSTELLA</a>		<a href="#"></a>
<a href="#"></a>		1.00	1.00	<a href="#">VAQ 142</a>		<a href="#"></a>
<a href="#"></a>		1.00	1.00	<a href="#">CV 67 JF KENNEDY</a>		<a href="#"></a>
<a href="#"></a>		0.94	0.94	<a href="#">VP 9</a>		<a href="#"></a>
<a href="#"></a>		0.94	0.94	<a href="#">VP 9</a>		<a href="#"></a>
<a href="#"></a>		0.92	0.92	<a href="#">HS 7</a>		<a href="#"></a>
<a href="#"></a>		0.92	0.92	<a href="#">HC 6 SEA COMP</a>		<a href="#"></a>
<a href="#"></a>		0.92	0.92	<a href="#">VFA 34</a>		<a href="#"></a>
<a href="#"></a>		0.88	0.88	<a href="#">VP 40</a>		<a href="#"></a>
<a href="#"></a>		0.83	0.83	<a href="#">VAW 123</a>		<a href="#"></a>
<a href="#"></a>		0.83	0.83	<a href="#">VF 32</a>		<a href="#"></a>
<a href="#"></a>		0.83	0.83	<a href="#">HSL 47 LAMPS</a>		<a href="#"></a>

## Job Details



Job: VF 211

TUM: May 1 2003

Location: VA, VIRGINIA BCH OCEANA

UIC / Command: 09086 VF 211

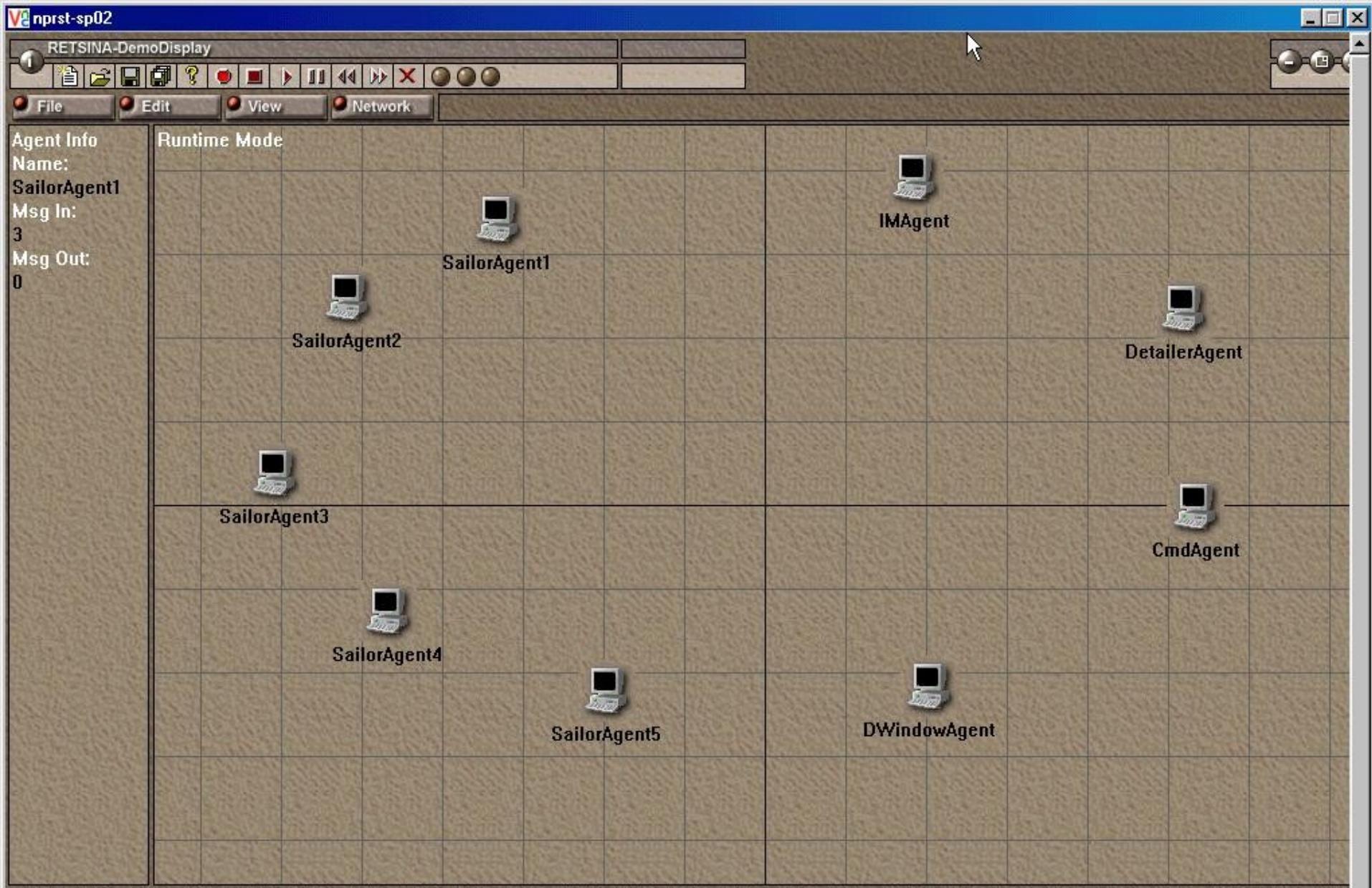
Pay Grade / Rank: E5 Petty Officer, Second Class

EMC: A110 AV MACHINIST'S MATE

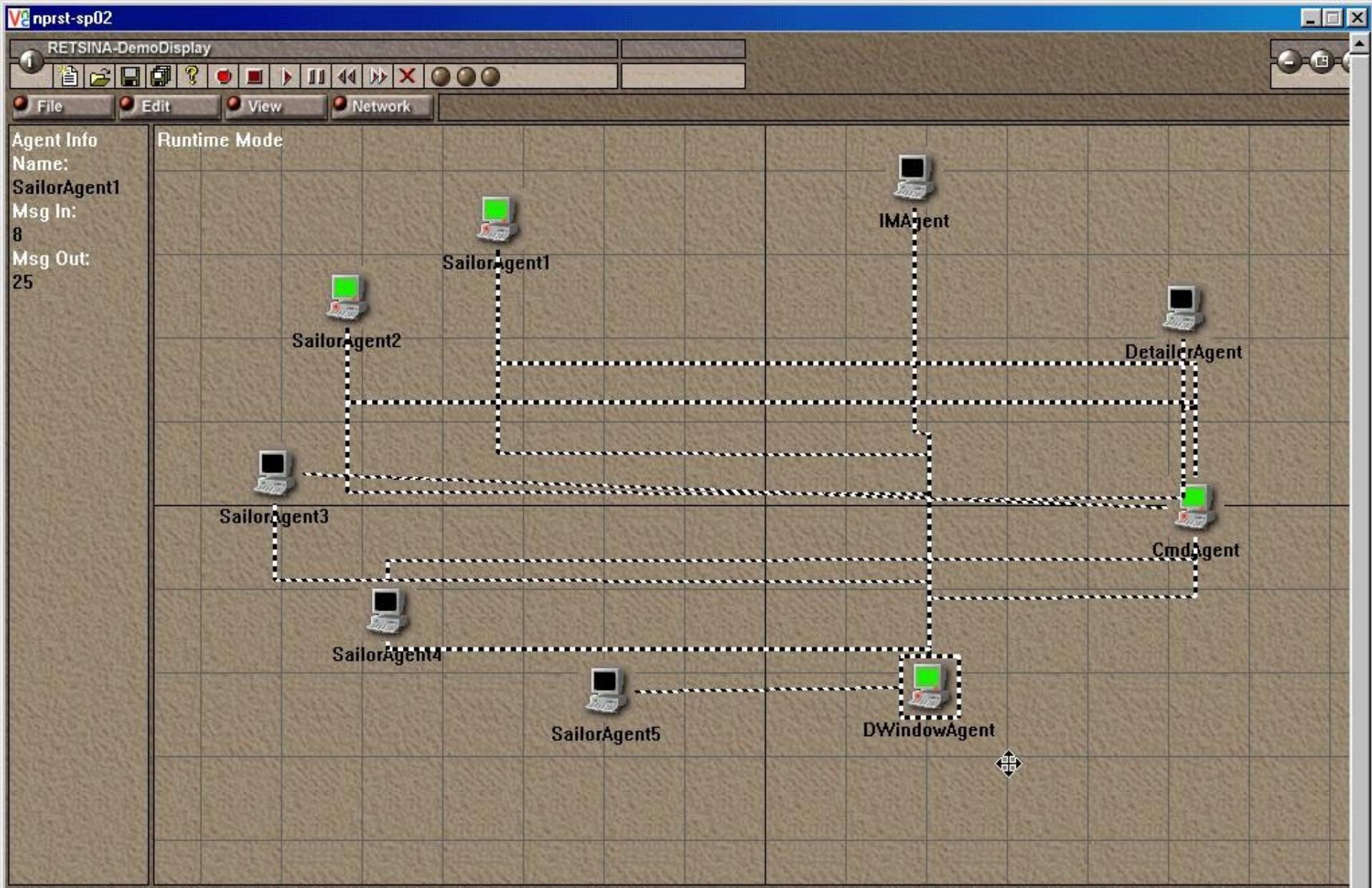
Duty Type: VF 2

Rating: AD

[Skill Score](#) [Preference Score](#) [Training Score](#)



[0] [13:38:18] Starting DemoDisplay [0.65]....  
[1] [13:38:49] Incoming message from [IMAgent]  
[2] [13:38:49] Creating agent...[IMAgent]



[0] [13:38:18] Starting DemoDisplay [0.65]....  
[1] [13:38:49] Incoming message from [IMAgent]  
[2] [13:38:49] Creating agent...[IMAgent]



Welcome, ADUKE

0.81	<a href="#">WILLIAM</a>	<a href="#">SHAFFER</a>	<a href="#">VS 30</a>	✓	✗
0.75	<a href="#">ANGELA</a>	<a href="#">JENKINS</a>	<a href="#">VAQ 135</a>	✓	✗
1.00	<a href="#">JESSI</a>	<a href="#">ROSEMOND</a>	<a href="#">MED HOLD CO PH</a>	✓	✗
1.00	<a href="#">RENE</a>	<a href="#">RAMOS</a>	<a href="#">VFA 81</a>	✓	✗
1.00	<a href="#">WARREN</a>	<a href="#">CAVERLY</a>	<a href="#">TPU NS NORVA OTH</a>	✓	✗
1.00	<a href="#">JESSICA</a>	<a href="#">SCHELL</a>	<a href="#">HS 4</a>	✓	✗
0.81	<a href="#">BRIAN</a>	<a href="#">WYBLE</a>	<a href="#">VAQ 141</a>	✓	✗
1.00	<a href="#">ADAN</a>	<a href="#">GARCIA</a>	<a href="#">VP 10</a>	✓	✗
1.00	<a href="#">GEORGI</a>	<a href="#">MURRAY</a>	<a href="#">VP 8</a>	✓	✗
1.00	<a href="#">DEREK</a>	<a href="#">WHITEHEAD</a>	<a href="#">S NAMTD LEMOORE</a>	✓	✗
1.00	<a href="#">CHRISTOPHER</a>	<a href="#">WATSONDEVINE</a>	<a href="#">VS 32</a>	✓	✗
1.00	<a href="#">JOHN</a>	<a href="#">SALOMON</a>	<a href="#">HSL 46 LAMPS</a>	✓	✗
1.00	<a href="#">PHILLIP</a>	<a href="#">LAXTON</a>	<a href="#">NAVTEST WINGLANT</a>	✓	✗
1.00	<a href="#">APRIL</a>	<a href="#">HARDY</a>	<a href="#">NAS OCE AIMD</a>	✓	✗
1.00	<a href="#">RALPH</a>	<a href="#">MATTOX</a>	<a href="#">CHSWGPAC</a>	✓	✗
1.00	<a href="#">DANIEL</a>	<a href="#">HASSENPLUG</a>	<a href="#">BEAUFORT SEA ODT</a>	✓	✗
T	<a href="#">ROGER</a>	<a href="#">DEMERS</a>	<a href="#">VF 154</a>	✓	✗
1.00	<a href="#">CEDRIC</a>	<a href="#">GRIFFIN</a>	<a href="#">VFA 82</a>	✓	✗
0.75	<a href="#">ELVIS</a>	<a href="#">SPENCERBRITO</a>	<a href="#">CVN 72 LINCOLN</a>	✓	✗
1.00	<a href="#">MARGARET</a>	<a href="#">CORSBY</a>	<a href="#">NAS PENSACOLA</a>	✓	✗
1.00	<a href="#">RAFAEL</a>	<a href="#">LIWANAG</a>	<a href="#">S C/C VP 30</a>	✓	✗
1.00	<a href="#">KEVIN</a>	<a href="#">COWAN</a>	<a href="#">VQ 1</a>	✓	✗
1.00	<a href="#">ROBERT</a>	<a href="#">GILLIAM</a>	<a href="#">VAW 121</a>	✓	✗
1.00	<a href="#">AXEL</a>	<a href="#">GIBBSSMALL</a>	<a href="#">S LTA HR</a>	✓	✗
1.00	<a href="#">JOSEPH</a>	<a href="#">BETZ</a>	<a href="#">HC 8 SEA COMP</a>	✓	✗



# Project Team

- **James Simien, NPRST - Principle Investigator for Web-based Marketplace and Cognitive Agent Technologies**
- **David Dickason, NPRST - Associate Investigator for Cognitive Agent Technologies**
- **Dr. Janet Spoonamore, NPRST**
- **Dr. Wesley Nimon, NPRST**
- **Ricky Hall, NPRST**
- **Tony Cunningham, NPRST**
- **CDR Shelly Wulff, NPRST**
- **Phanni Penumatsa, University of Memphis**
- **Dr. Katia Sycara, CMU**
- **Joseph Giampapa, Cuihong Li, CMU**
- **Elaine Reed, Jeff LaMarche, Frank Fang, Resource Consultants, Inc.**